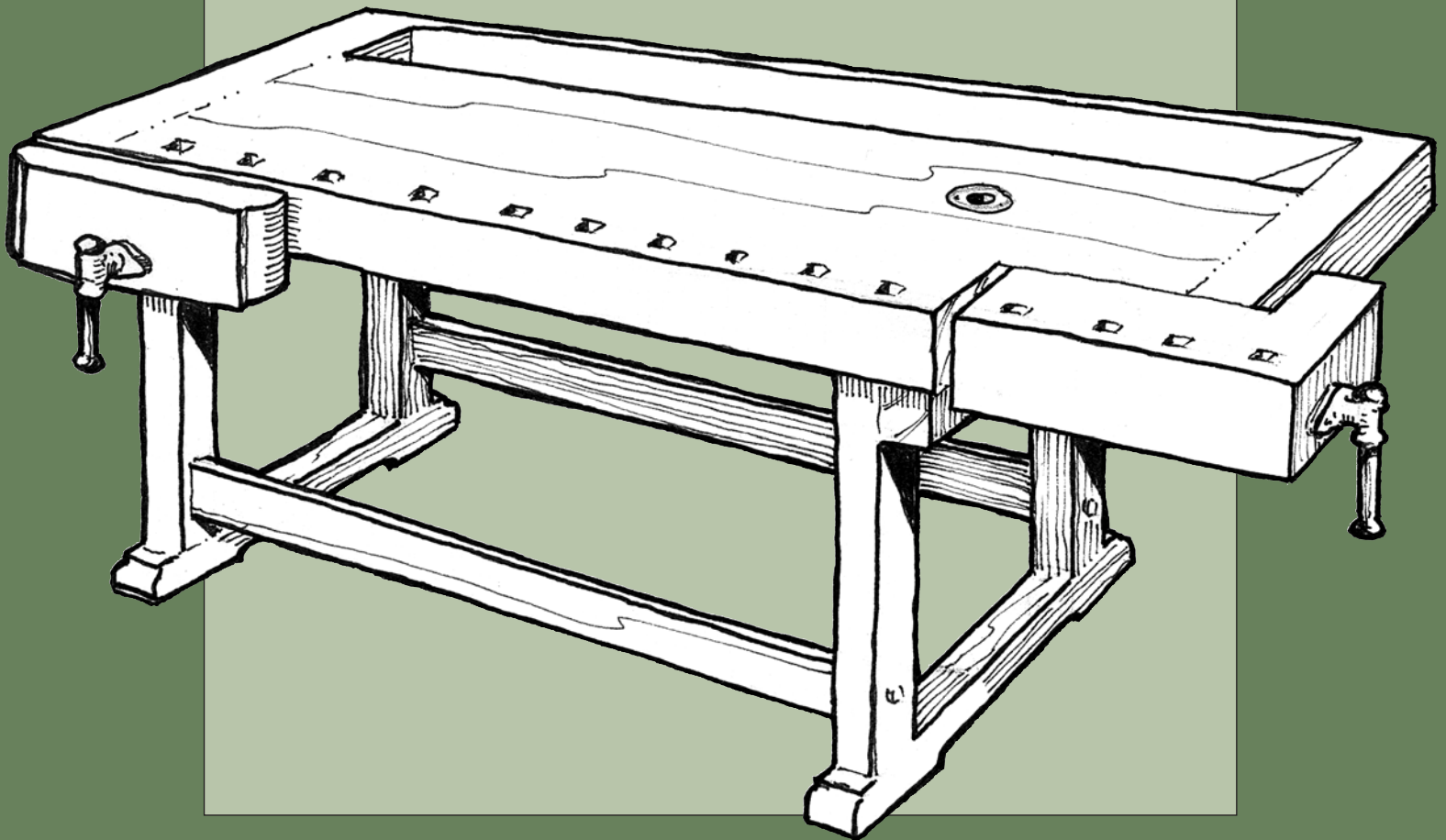


The Workbench

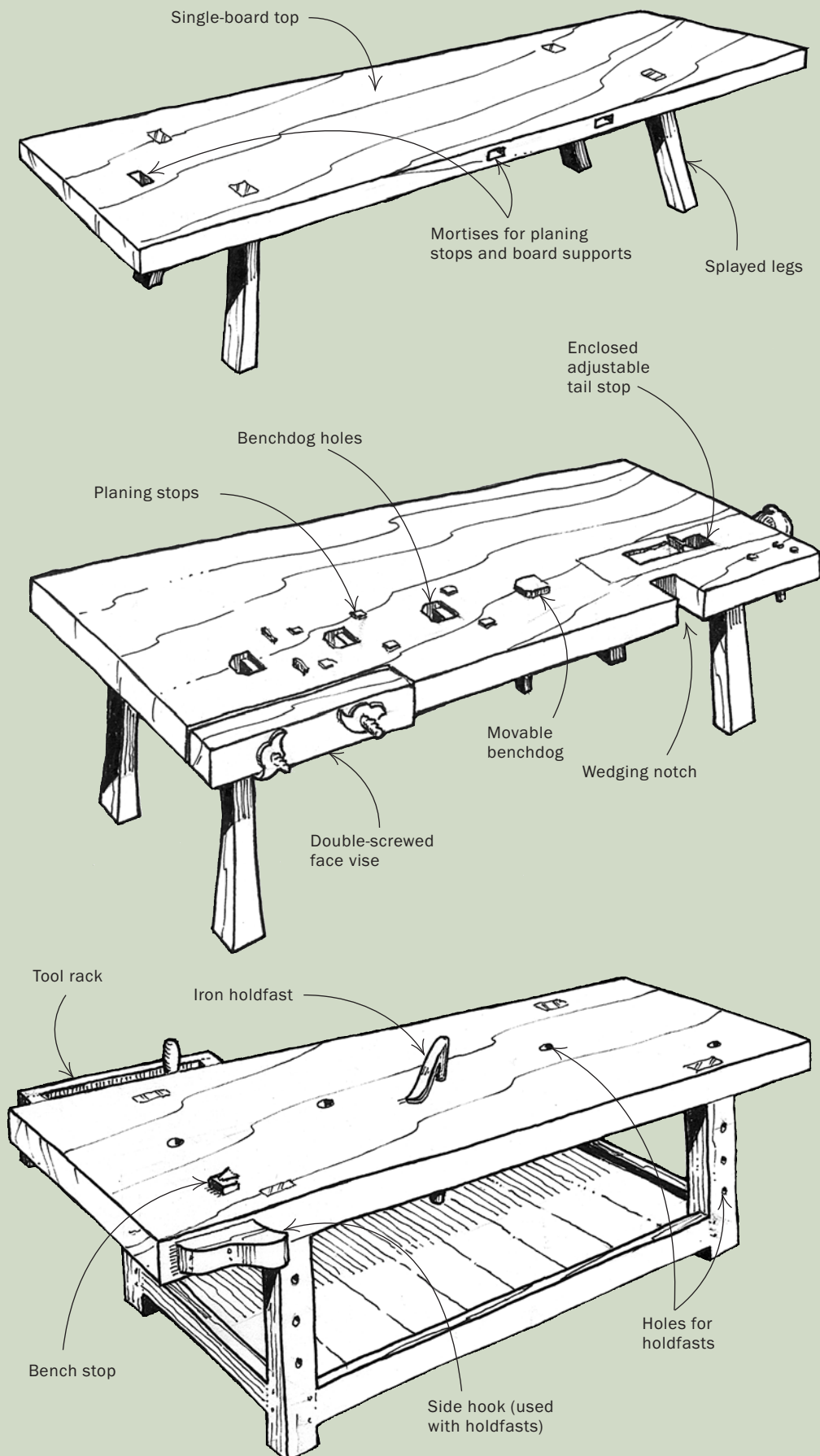
An illustrated guide to an essential
woodworking tool

BY GRAHAM BLACKBURN



In some parts of the world, woodworkers use the floor as their work surface. In Japan, it's a narrow beam. But in the West, woodworkers traditionally have used a substantial workbench. In fact, before tablesaws and routers became for most woodworkers their right and left hands, the workbench was the most important tool of the craft. While it may no longer be the first tool a woodworker encounters in the shop, the workbench nevertheless remains at the heart of woodworking. A closer appreciation of its uses and strengths can do much to improve your woodworking experience, so here's a look at the development of the workbench, its major variations and the many practical fixtures associated with its use.

Great moments in workbench history



ROMAN BENCH

The prime purpose of the workbench is to facilitate the flattening and smoothing of stock, typically by planing. So it is no surprise that some of the earliest benches were used by the Romans 2,000 years ago, because it was the Romans who first made use of the metal-bodied plane. The Roman bench was little more than a long board supported by splayed legs and fitted with stops to prevent a board from being pushed off the bench during planing. This bench remained popular for more than four centuries after the demise of the Roman Empire and in some areas persists even today. The drawing is based on a photograph of a bench found in Saalburg, Germany, 250 B.C.

16TH-CENTURY BENCH

After the Middle Ages, with the development of more sophisticated forms of furniture, benches grew larger and began to feature additional holding devices. By the 17th century, vises had become common in Northern Europe. German and Scandinavian benches, in particular, were fitted with vises very similar to the large wooden tail and face vises that were common on British benches until the introduction of metal vises. The drawing is based on one by Löffelholz, 1505.

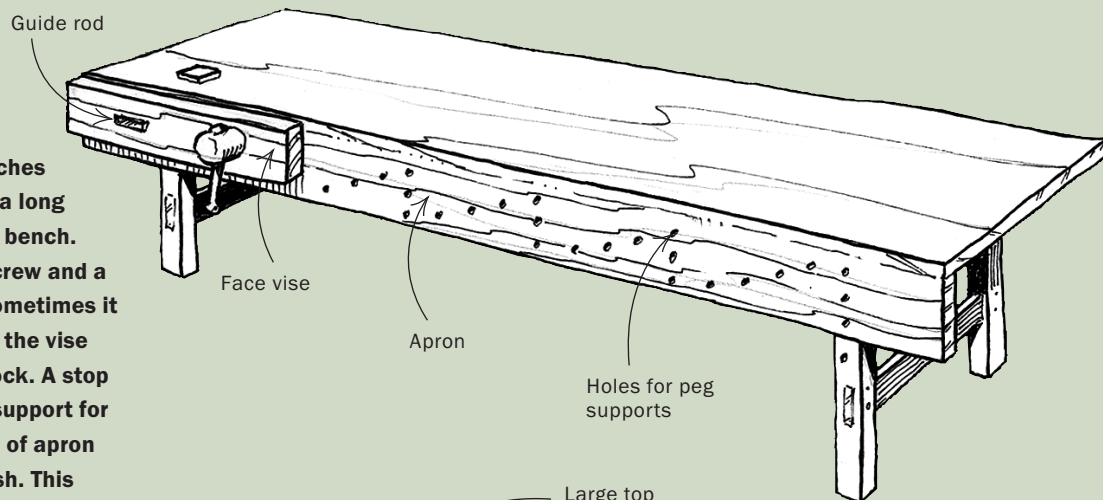
18TH-CENTURY FRENCH BENCH

One of the more distinctive varieties, the commonly used French bench was basically a heavy table that featured a tool rack, bench stops, side hooks and holdfasts to secure the work; vises were a rarity.

Workbench history (continued)

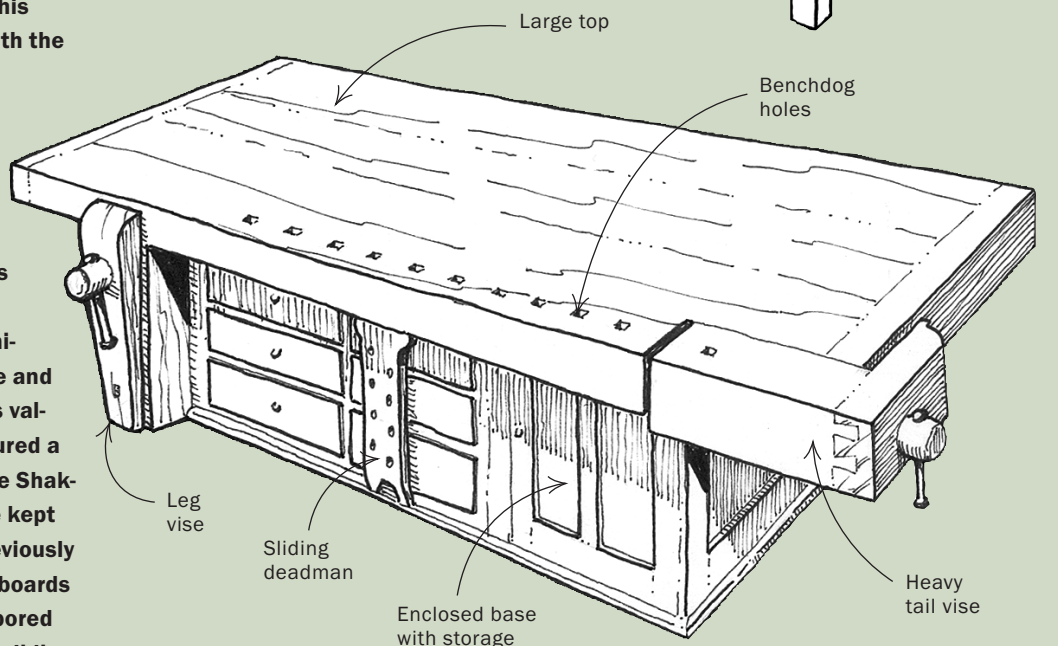
18TH-CENTURY BRITISH BENCH

In contrast to French benches and to most other European types, British benches from the 18th century relied heavily on a long face vise installed at the left end of the bench. This long vise frequently had a single screw and a guide rod to help keep it parallel, but sometimes it possessed two screws arranged so that the vise face could be angled for nonparallel stock. A stop and a holdfast also were common, but support for long boards held in the vise, in the form of apron pegs or a deadman, was distinctly British. This British-style bench emigrated to America with the early Colonists.



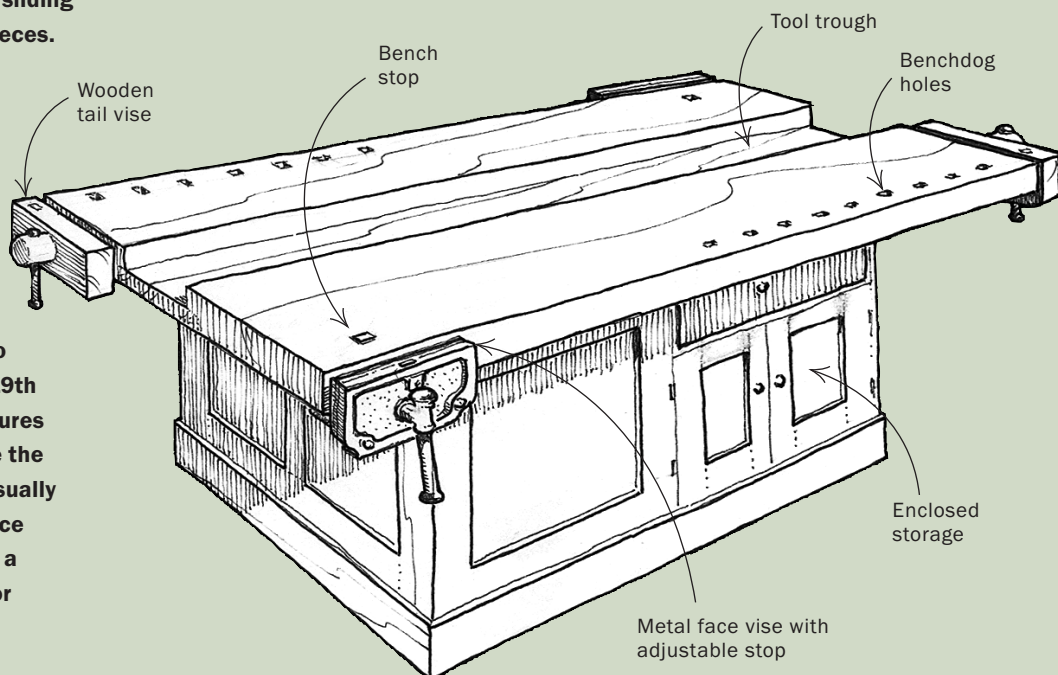
SHAKER BENCH

Among the first distinctly American benches were those built by the Shakers, a religious sect famous for its simple but well-built furniture. Shaker benches typically were massive and without tool trays, and because the Shakers valued order and neatness, their benches featured a base that was fully enclosed for storage. The Shakers also were fond of leg vises that could be kept parallel, unlike the garterless face vises previously common on workbenches. Because the cupboards and drawers in the base made the use of a bored apron impossible, the Shakers often used a sliding deadman to provide support for long workpieces.



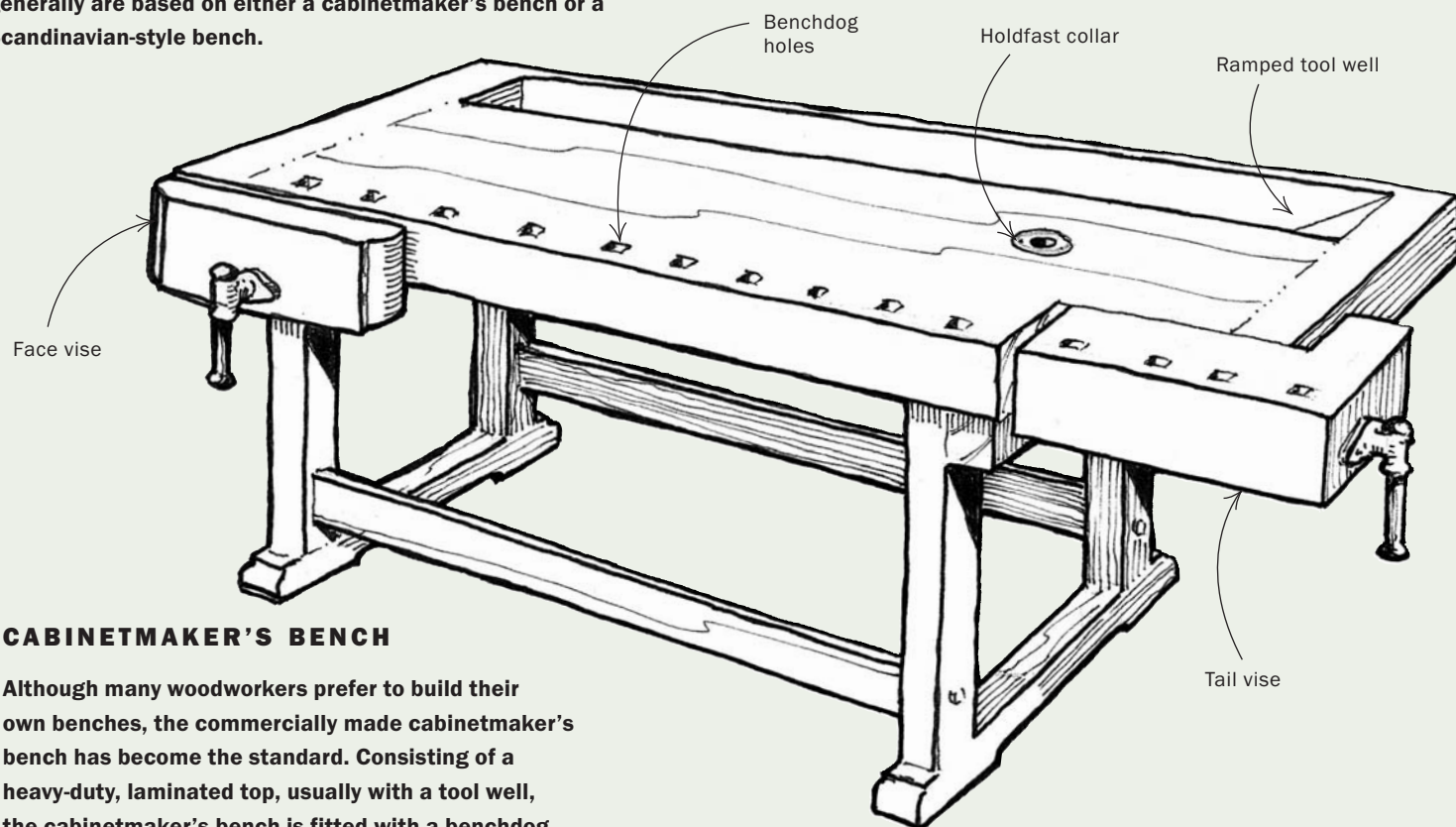
19TH-CENTURY SCHOOL BENCH

The workbenches we use today owe much to the school bench that was common in the 19th and early 20th centuries. The essential features of this bench, whether single or double (like the one illustrated), are a large work surface, usually with a trough or a tool well, both end and face vises (increasingly of the metal variety) and a system of benchdog holes in the top used for clamping workpieces.



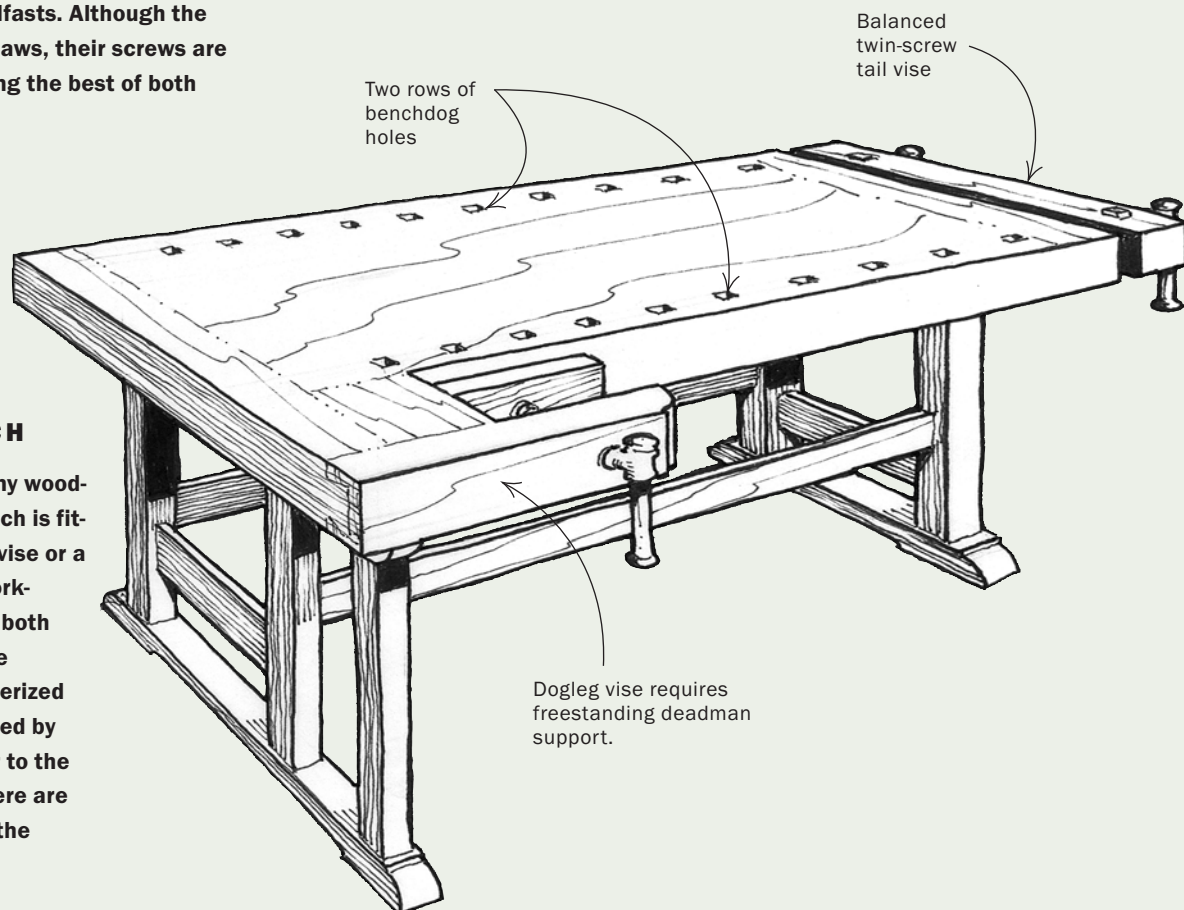
CONTEMPORARY BENCHES

Though there are countless variations, today's workbenches generally are based on either a cabinetmaker's bench or a Scandinavian-style bench.



CABINETMAKER'S BENCH

Although many woodworkers prefer to build their own benches, the commercially made cabinetmaker's bench has become the standard. Consisting of a heavy-duty, laminated top, usually with a tool well, the cabinetmaker's bench is fitted with a benchdog system and a provision for holdfasts. Although the vises may have heavy wooden jaws, their screws are invariably metal, thus combining the best of both old and new.



SCANDINAVIAN BENCH

A bench style popular with many woodworkers, the Scandinavian bench is fitted with either a standard tail vise or a balanced vise that can hold workpieces between benchdogs on both edges of the top, as shown. The Scandinavian bench is characterized by a dogleg face vise, considered by those who use it to be superior to the standard face vise because there are no screws to get in the way of the workpiece.

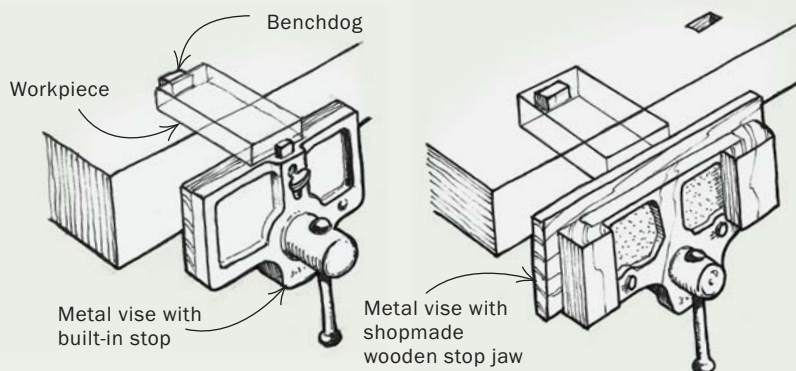
Vises

Most contemporary benches are fitted with vises. While there are many varieties, certain things remain true for all vises. If the workpiece is to be held securely without being damaged, the jaws should be wooden or wood lined, clean, aligned and parallel.

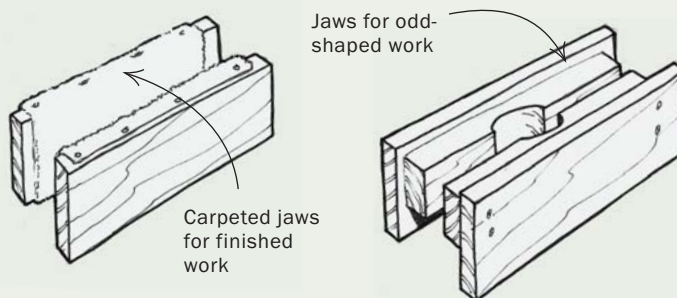
FACE VISES

A face vise is used for holding workpieces during planing. It works best if the inside faces of the jaws are flush with the front of the bench and if the tops of both jaws are flush with the surface of the bench. Although there will be occasions when you want to secure odd shapes (which can be done easily with purpose-made auxiliary jaws), the jaws should close perfectly parallel to each other so that they will hold even a thin sheet of paper firmly. Metal vises may need to be reset on the bench to meet these conditions, and they also may need to have their wood facings replaced. Wooden-jaw vises can be made flush more easily. But before altering the jaws, examine the way your particular vise works and how it is attached to the bench.

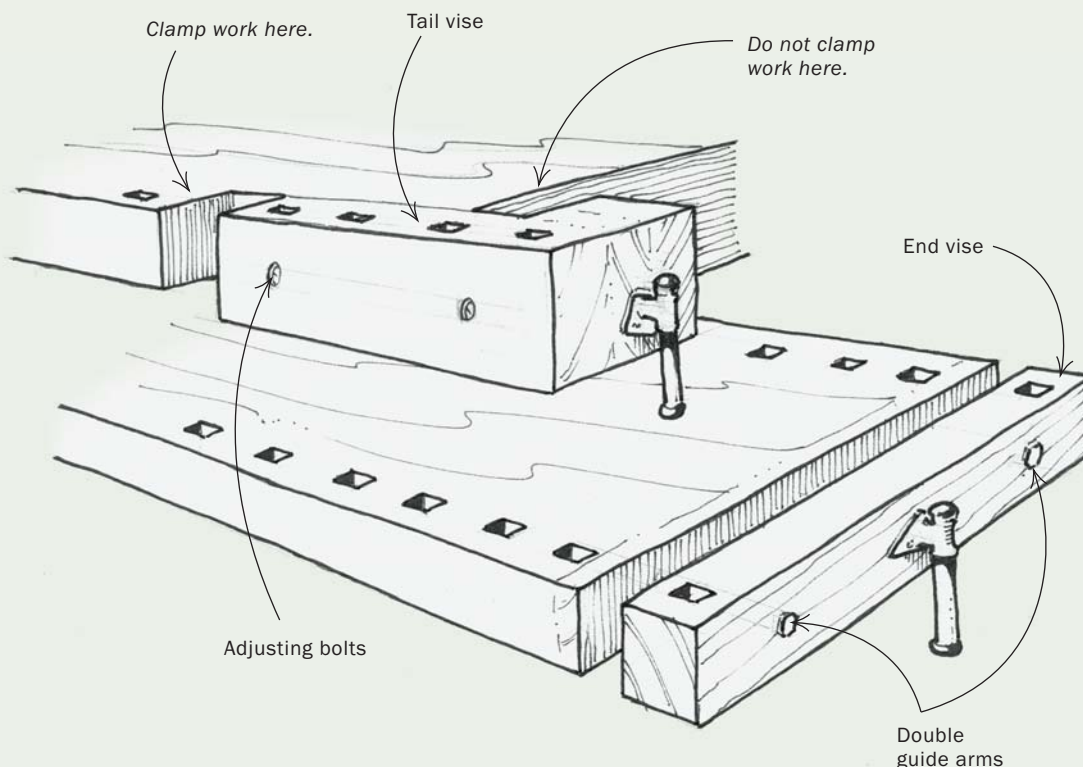
Pay special attention to making sure the guide arms run smoothly with minimal play. Older wooden vises may need their guide arms rescrewed to the jaws and their guide blocks adjusted. Wooden screws depend on well-fitting garters and properly positioned threaded blocks. Providing they are properly aligned, newer vises with metal screws and guide arms have fewer problems and may need nothing more than occasional cleaning and lubrication.



Some metal vises have built-in adjustable stops that can be used to clamp work between a benchdog and a stop in the benchtop. Vises that don't have adjustable stops can be fitted with a wooden stop jaw that will perform the same function or that can be custom-cut to hold other shapes.



You may want to make various auxiliary jaws, such as carpeted jaws to hold finished work or jaws to hold round and odd-shaped pieces.

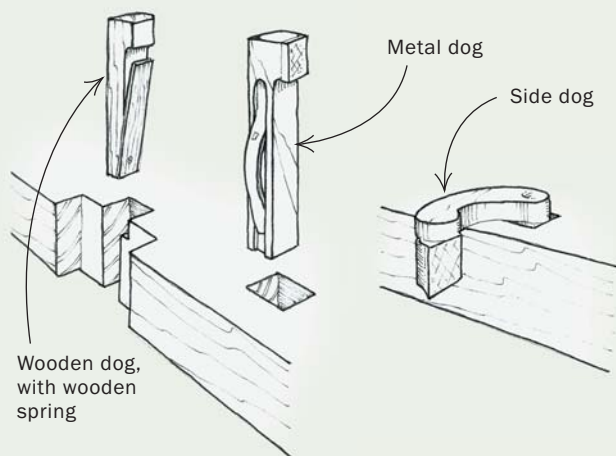


TAIL VISES

A tail vise holds a workpiece at the front of the bench. Newer tail vises that ride on a steel plate fixed to the bench can be adjusted so that the top and front of the vise remain flush with the top and front of the bench. Older tail vises ride on rails attached beneath the benchtop. Neither kind is designed to hold anything by the tail of the vise; doing so might misalign the vise. However, double-screwed end vises or end vises with a single screw and widely spaced guide arms can hold work against the end of the bench and, if they are as wide as the bench, can be fitted with benchdogs. A tail vise also can be used to clamp workpieces between a benchdog fixed in the benchtop and a dog fixed in the vise itself.

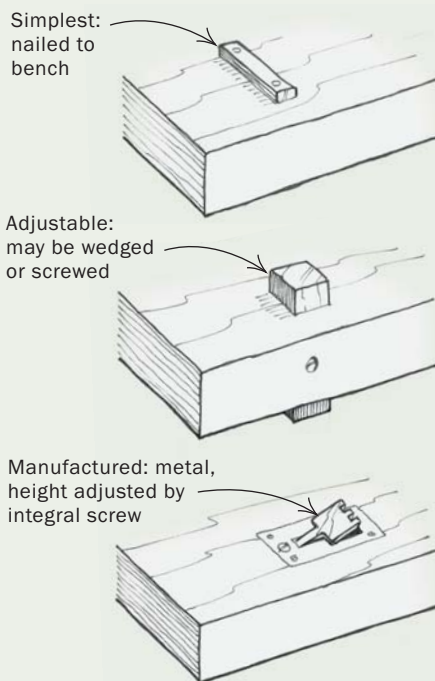
Bench accessories

A bench with vises, even when everything is in top condition and perfectly adjusted, is still only half the asset it might be—unless it's furnished with a variety of devices, such as benchdogs, holdfasts and bench hooks



BENCHDOGS

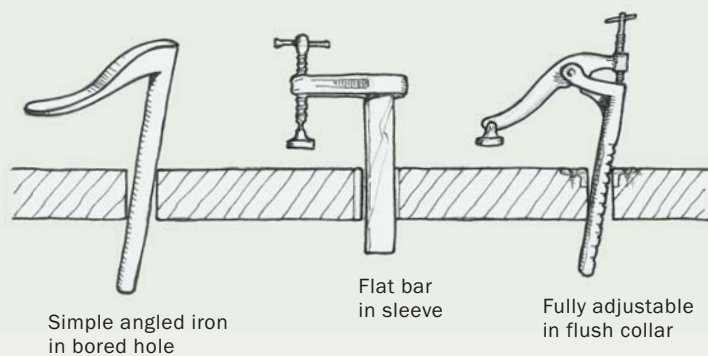
Metal dogs may last longer and fit better, but wooden dogs are easier to make and pose less of a threat to both tools and finished work surfaces. Side dogs also can be extremely useful for holding stock against the front apron.



BENCH STOPS

A bench stop is designed to prevent the workpiece from being pushed off the bench. In its simplest form, it may be a small piece of scrap clamped or tacked anywhere on the bench. An integral stop, whether a simple wooden stop held in place and at the right height by friction, wedge or a simple screw, or one of the variously designed factory-made metal stops, is more convenient and often functions as the last stop in a line of benchdogs.

HOLDFASTS



A holdfast remains one of the most versatile pieces of equipment you can own. There are various modern forms available, but the simplest L-shaped iron bar inserted in any conveniently bored hole in the benchtop is efficient. Simply knock the top of the holdfast to secure the workpiece, and hit the back of the holdfast to release the workpiece. A holdfast's two main advantages are its ability to hold odd-shaped, flat and rectangular pieces, and the fact that it can be positioned anywhere on the bench. Don't agonize over where to bore the first hole—you inevitably will need to bore another hole somewhere else. A particularly useful place is near a vise so that the vise and holdfast can be used together in a variety of ways. Older benches typically were bored in various places along the length.

BENCH HOOKS

The most common device for securing small workpieces to the bench is the bench hook. This can be made in a variety of ways and may function as a simple sawing support, a sawing guide when kerfed exactly at 90°, 45° or any other simple or compound angle, or as a convenient end-grain shooting block.

